



Ethernet Router/Bridge Module



FEATURES

- Provides Ethernet LAN connectivity via the Kilomux main links
- Programmable data rates from 9.6 to 1280 kbps
- LAN interfaces: AUI, BNC and UTP (10BaseT)
- Two operation modes:
 - Bridge mode, transparent to all Level 3 protocols
 - Router mode for IP and IPX routing over PPP, Frame Relay
- Solid Firewall (session based) protection
- Single IP address translation
- Integrated SNMP agent
- Flash memory for software downloading
- Enables connectivity with two remote sites

DESCRIPTION

- The KMBE/N Ethernet Router/Bridge modules are used for connecting remote Ethernet LANs to a central Ethernet network, via the Kilomux main links. The LAN interface conforms to IEEE 802.3, and can be ordered for:
 - Ethernet (10Base5 – AUI)
 - Thin Ethernet (10Base2 – BNC)
 - UTP Ethernet (10BaseT).
- Communication between KMBE/N modules is over the Kilomux main link. The data rate used by KMBE/N can be selected from 9.6 to 1280 kbps.
- Connection between the LANs is established by operating KMBE/N modules opposite each other, one connected to the main (central) LAN and the other connected to the remote LAN. KMBE/N can also operate simultaneously opposite both links in dual link applications, enabling Ethernet connectivity with two remote sites (see *Figure 2*). The KMBE/N can interoperate with an older version KMBE module.
- KMBE/N is fully compatible with other stand-alone MBEs. This enables a stand-alone RAD MBE-RAS remote access server at the central location to be connected to Kilomux KMBE/N modules at each branch office, for connecting multiple remote LANs and PCs to the central LAN.

BRIDGING MODE

- KMBE/N can operate as a MAC level remote bridge, performing filtering and forwarding of only those packets addressed to the remote stations. Up to 80 remote and central LAN stations are supported.
- KMBE/N supports the physical and data link layers of the OSI model. Bridging is completely transparent to higher-level protocols, such as TCP/IP, DECNET, XNS, ISO, as

well as to operating systems such as NetWare and VINES.

- Filters based on user-defined masks, improve WAN utilization by ensuring that only necessary packets are transmitted over the WAN.

ROUTING MODE

- IP and IPX can be routed over PPP. Router links can operate opposite any PPP-compliant device, including third party routers, or any stand-alone MBE device.
- IPX can also be routed over Frame Relay. KMBE/N supports Frame Relay protocol with up to 30 DLCIs.
- The Single IP address translation feature allows a small or medium office LAN to connect to the Internet using a single, dynamically or statically allocated IP address from the central access router.
- An integral Solid Firewall protects an office LAN from undesired entry from the Internet, using session based firewalling.

CONTROL

- KMBE/N operation is fully automatic, and includes serial link start-up and recovery, as well as insertion and removal of remote workstations.
- Quick setup, configuration and monitoring can be performed from an ASCII terminal connected directly to the KMBE/N control port, or via Telnet over the LAN or WAN.
- An SNMP agent provides in-band or out-of-band management by RADview or any other standard SNMP management station.
- Software downloading via the control port is available using XMODEM, and via LAN or WAN using TFTP. Product configurations and software are saved in Flash memory.

KMBE/N

Ethernet Router/Bridge Module

SPECIFICATIONS

LAN INTERFACE

- **Standard**
IEEE 802.3
- **Type**
 - 10Base5 (AUI) with 15-pin D-type, female connector
 - 10Base2 (Thin Ethernet) with BNC coax, female connector
 - 10BaseT (UTP) with RJ-45 connector

CONTROL PORT

- **Interface**
RS-232/V.24
- **Connector**
RJ-45
- **Data Rates**
1.2 to 9.6 kbps
- **Data Format**
8 bit, no parity

GENERAL

- **Bandwidth Allocated on Kilomux Main Link**
9.6 to 1280 kbps
- **Data Buffer Size**
256 bytes
- **Protocol**
HDLC based
- **Power Consumption**

Voltage	Current	Power
+5V	500 mA	2.50W
+12V	80 mA	0.96W
-12V	-	-
Total	580 mA	3.46W

- **Panel Control**
Reset pushbutton
- **Indicators**
 - MAIN** (green) – lights when KMBE/N is configured for connection to the main LAN
 - REM** (green) – lights when KMBE/N is configured for connection to the remote LAN
 - LINK ERR** (red) per link A&B – Flashes when the relevant main link between the local and remote KMBE/N is disconnected; lights momentarily when an error is detected on a packet received from the relevant link.

- LAN TX** (yellow) – lights momentarily when packets are transmitted toward the LAN
- LAN RX** (yellow) – lights momentarily when packets are received from the LAN
- RDY** (green) – lights when KMBE/N is ready to forward packets; flashes when KMBE/Ns are synchronized but no workstation has requested insertion
- LAN ERR** (red) – lights momentarily when an error is detected on the LAN interface
- UTP** (green) – lights when 10BaseT interface is connected to the LAN on modules with UTP interface only

ORDERING

KM-2100M-KMBE/N/*
Enhanced Ethernet Router/Bridge Module for KM-2100/2104

- * Specify LAN interface:
AUI for 10Base5
BNC for 10Base2
UTP for 10BaseT

APPLICATIONS

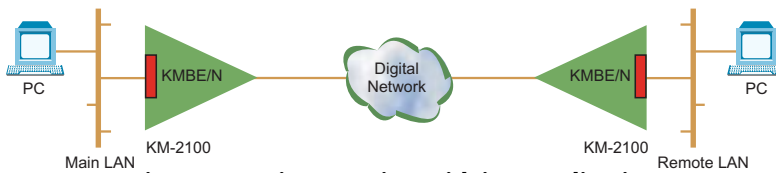


Figure 1. Point-to-Point Bridging Application

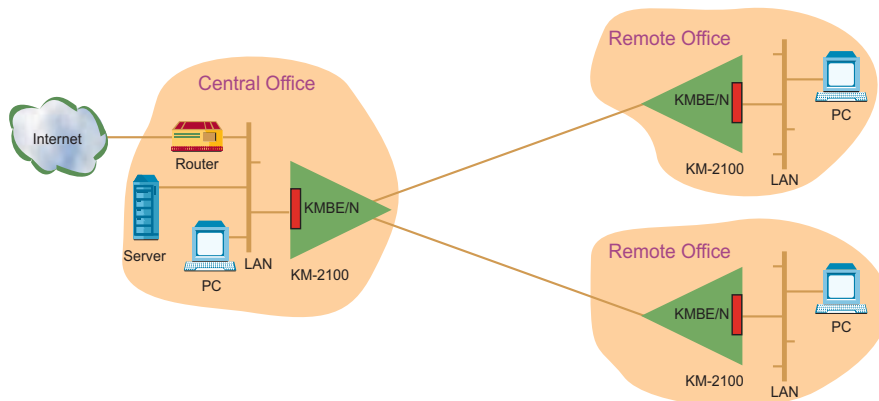


Figure 2. Dual Link Routing Application Connecting Two Remote Site LANs to the Internet via the Central Site LAN



data communications

www.rad.com

- **International Headquarters**
24 Raoul Wallenberg Street
Tel Aviv 69719, Israel
Tel: (972) 3-6458181
Fax: (972) 3-6498250, 6474436
Email: rad@rad.com
- **U.S. Headquarters**
900 Corporate Drive
Mahwah, NJ 07430
Tel: (201) 529-1100
Toll free: 1-800-444-7234
Fax: (201) 529-5777
Email: market@radusa.com

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